



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Monday, July 1, 2019
WELL WORK PERMIT
Horizontal 6A / New Drill

HG ENERGY II APPALACHIA, LLC
5260 DUPONT ROAD

PARKERSBURG, WV 26101

Re: Permit approval for MND23 N-2H
47-051-02230-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief

A blue ink signature of James A. Martin, written in a cursive style.

Operator's Well Number: MND23 N-2H
Farm Name: HG ENERGY II APPALACHIA
U.S. WELL NUMBER: 47-051-02230-00-00
Horizontal 6A New Drill
Date Issued: 7/1/2019

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

PERMIT CONDITIONS

11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.

WW-6B
(04/15)

API NO. 47- _____ - _____
OPERATOR WELL NO. MND23 N-2H
Well Pad Name: MND23

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: HG Energy II Appalachia, LLC 494519932 Marshall Franklin Powhatan Point
Operator ID County District Quadrangle

2) Operator's Well Number: MND23 N-2H Well Pad Name: MND23

3) Farm Name/Surface Owner: CONSOL/HG Energy II Appalachia, LLC Public Road Access: Nixon Ridge Road (SLS 21/1)

4) Elevation, current ground: 1273' Elevation, proposed post-construction: 1240'

5) Well Type (a) Gas Oil Underground Storage
Other

(b) If Gas Shallow Deep
Horizontal

6) Existing Pad: Yes or No No

JM 4/17/19

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus, 6474' - 6540', 66' Thick, 4204 psi

8) Proposed Total Vertical Depth: 6535'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 15875'

11) Proposed Horizontal Leg Length: 8397'

12) Approximate Fresh Water Strata Depths: 538', 801', 898', 947'

13) Method to Determine Fresh Water Depths: Nearest offset wells

14) Approximate Saltwater Depths: None

15) Approximate Coal Seam Depths: 847' - 852'

16) Approximate Depth to Possible Void (coal mine, karst, other): None anticipated

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes No

(a) If Yes, provide Mine Info: Name: Marshall County Mine
Depth: 890' to seam base
Seam: Pittsburgh #8
Owner: Murray Energy Corporation

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WW-6B
(04/15)

API NO. 47- _____ - _____
 OPERATOR WELL NO. MND23 N-2H
 Well Pad Name: MND23

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	J-55	94	100'	100'	Drilled In
Fresh Water	13 3/8"	New	J-55	54.5	1075'	1075'	CTS
Coal							
Intermediate	9 5/8"	New	J-55	40	3150'	3150'	CTS
Production	5 1/2"	New	P-110	23	15875'	15875'	CTS
Tubing							
Liners							

M 4/17/19

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	20"	0.438	2110		Type 1, Class A	
Fresh Water	13 3/8"	17.5"	0.380	2730		Type 1, Class A	40% excess, yield = 1.20, CTS
Coal							
Intermediate	9 5/8"	12 1/4"	0.395	3950		Type 1, Class A	40% excess, yield = 1.20, CTS
Production	5 1/2"	8 1/2"	0.415	14520	11500	Type 1, Class A	20% excess, lead yield = 1.15, CTS
Tubing							
Liners							

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PACKERS

Kind:				
Sizes:				
Depths Set:				

WW-6B
(10/14)

API NO. 47- _____ - _____

OPERATOR WELL NO. MND23 N-2H _____

Well Pad Name: MND23 _____

8/4/17/19

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill the vertical depth to the Marcellus at an estimated total vertical depth of approximately 6,535 feet. Drill to estimated 15,875 TMD, stimulate and be capable of producing the Marcellus Formation. Should an unanticipated void be encountered in the coal, we will install a minimum of 20' of casing below the void but not more than 100' below the void, set a basket and grout to surface.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

The stimulation will be multiple stages divided over the lateral length of the well. Stage spacing is dependent upon engineering design. Slickwater fracturing technique will be utilized on each stage using sand, water and chemicals. See attached list. Maximum pressure not expected to exceed 11,500 psi.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 10.557 acres

22) Area to be disturbed for well pad only, less access road (acres): 8.498 acres

23) Describe centralizer placement for each casing string:

Conductor - N/A
Surface Casing - Bow Springs (over collars) on first 2 joints then every third joint to 100' from surface
Intermediate Casing - Bow Springs (over collars) on first 12 joints, then every third joint to 100' from surface
Production Casing - Run 1 spiral centralizer every 5 joints from the top of the curve to surface. Run 1 spiral centralizer every 3 joints from the 1st 5.5" long joint to the top of the curve.

24) Describe all cement additives associated with each cement type:

Conductor - Already grouted in
Surface Casing - "15.6 ppg PNE-1 + 3% bwoc CaCl 40% Excess Yield=1.20 / CTS"
Intermediate Casing - "Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl 40% Excess / Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl zero% Excess. CTS
Production Casing - "Lead: 14.5 ppg POZ:PNE-1 + 0.3% bwoc R3 + 1% bwoc EC1 + 0.75 gal/sk FP13L + 0.3% bwoc MPA170Tail: 14.8 ppg PNE-1 + 0.35% bwoc R3 + 0.75 gal/sk FP13L + 50% bwoc ASCA1 + 0.5% bwoc MPA17020 ExcessLead Yield=1.19Tail Yield=1.94CTS"

25) Proposed borehole conditioning procedures:

Conductor - Once at casing setting depth, ensure hole is clean at TD
Surface Casing - Circulate & condition @ TD w/ Air. RIH w/ casing & fill w/ Fresh Water. Circulate a minimum of 1 hole volume, plus 30 bbls of 6% bentonite Gel/50# of poly flake, then clear casing w/ Fresh Water prior to pumping cement.
Intermediate Casing - Circulate & condition @ TD w/ Air. RIH w/ casing & fill w/ Fresh Water. Circulate a minimum of 1 hole volume, plus 30 bbls of 6% bentonite Gel/50# of poly flake, then clear casing w/ Fresh Water prior to pumping cement.
Production Casing - Once on bottom/TD with casing, circulate at max allowable pump rate for at least 2x bottoms up, or until returns and pump pressures indicate the hole is clean. Circulate a minimum of one hole volume prior to pumping cement.

*Note: Attach additional sheets as needed.

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MND23 Well Pad (N-1H to N-6H)
Cement Additives

Material Name	Material Type	Material Description	CAS #																		
Premium NE-1	Portland Cement	Premium NE-1 is a portland cement with early compressive strength properties.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Portland cement</td> <td>90 - 100</td> <td>65997-15-1</td> </tr> <tr> <td>Calcium oxide</td> <td>1 - 5</td> <td>1305-78-8</td> </tr> <tr> <td>Magnesium oxide</td> <td>1 - 5</td> <td>1309-48-4</td> </tr> <tr> <td>Crystalline silica: Quartz (SiO2)</td> <td>0.1 - 1</td> <td>14808-60-7</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Portland cement	90 - 100	65997-15-1	Calcium oxide	1 - 5	1305-78-8	Magnesium oxide	1 - 5	1309-48-4	Crystalline silica: Quartz (SiO2)	0.1 - 1	14808-60-7			
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Bentonite	Extender	Commonly called gel, it is a clay material used as a cement extender and to control excessive free water.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>bentonite</td> <td>90 - 100</td> <td>1302-78-9</td> </tr> <tr> <td>Crystalline silica: Quartz (SiO2)</td> <td>5 - 10</td> <td>14808-60-7</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	bentonite	90 - 100	1302-78-9	Crystalline silica: Quartz (SiO2)	5 - 10	14808-60-7									
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Calcium Chloride	Accelerator	A powdered, flaked or pelletized material used to decrease thickening time and increase the rate of strength development	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Calcium chloride</td> <td>90 - 100</td> <td>10043-52-4</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Calcium chloride	90 - 100	10043-52-4												
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Cello Flake	Lost Circulation	Graded (3/8 to 3/4 inch) cellophane flakes used as a lost circulation material.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>No hazardous ingredient</td> <td></td> <td></td> </tr> </tbody> </table>	Ingredient name	%	CAS number	No hazardous ingredient														
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FP-13L	Foam Preventer	FP-13L is a clear liquid organic phosphate antifoaming agent used in cementing operations. It is very effective minimizing air entrapment and preventing foaming tendencies of latex systems.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Tributyl phosphate</td> <td>90 - 100</td> <td>126-73-8</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Tributyl phosphate	90 - 100	126-73-8												
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Granulated Sugar	Retarder	Used to retard cement returns at surface. A proprietary product that provides expansive properties and improves bonding at low to moderate temperatures.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Sucrose</td> <td>90 - 100</td> <td>57-50-1</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Sucrose	90 - 100	57-50-1												
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Sucrose	90 - 100	57-50-1																			
EC-1	Gas Migration	Multi-purpose polymer additive used to control free fluid, fluid loss, rheology, and gas migration.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>No hazardous ingredient</td> <td></td> <td></td> </tr> </tbody> </table>	Ingredient name	%	CAS number	No hazardous ingredient														
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Poz (Fly Ash)	Base	A synthetic pozzolan, (primarily Silicon Dioxide). When blended with cement, Pozzolan can be used to create lightweight cement slurries used as either a filler slurry or a sulfate resistant completion cement.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Crystalline silica: Quartz (SiO2)</td> <td></td> <td>14808-60-7</td> </tr> <tr> <td>Calcium oxide</td> <td></td> <td>1305-78-8</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Crystalline silica: Quartz (SiO2)		14808-60-7	Calcium oxide		1305-78-8									
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R-3	Retarder	A low temperature retarder used in a wide range of slurry formulations to extend the slurry thickening time.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Organic acid salt</td> <td>40 - 50</td> <td>Trade secret.</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Organic acid salt	40 - 50	Trade secret.												
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S-5	Surfactant	Used to water wet casing and formation to facilitate cement bonding.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>2-Butoxyethanol</td> <td>20 - 30</td> <td>111-76-2</td> </tr> <tr> <td>Proprietary surfactant</td> <td>10 - 20</td> <td>Trade secret.</td> </tr> <tr> <td>D-Glucopyranose, oligomeric, C10-16-alkyl glycosides</td> <td>5 - 10</td> <td>110615-47-9</td> </tr> <tr> <td>Alkylarylsulfonate amine salt</td> <td>1 - 5</td> <td>Trade secret.</td> </tr> <tr> <td>Polyoxyalkylenes</td> <td>0.1 - 1</td> <td>Trade secret.</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	2-Butoxyethanol	20 - 30	111-76-2	Proprietary surfactant	10 - 20	Trade secret.	D-Glucopyranose, oligomeric, C10-16-alkyl glycosides	5 - 10	110615-47-9	Alkylarylsulfonate amine salt	1 - 5	Trade secret.	Polyoxyalkylenes	0.1 - 1	Trade secret.
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List of Frac Additives by Chemical Name and CAS #MND23 Well Pad (N-1H to N-6H)

Chemical Name	CAS #	Multiple CAS #'s
Pro Shale Slik 405	Mixture	68551-12-2
		7647-14-5
		12125-02-9
		64742-47-8
Pro Hib II	Mixture	68412-54-4
		68607-28-3
		107-21-1
		111-76-2
		67-56-1
		107-19-7
Silica Sand and Ground Sand	Mixture	14808-60-7
		1344-28-1
		1309-37-1
		13463-67-7
Hydrochloric Acid 22 DEG BE	7647-01-0	
PROGEL - 4.5	64742-96-7	
BIO CLEAR 2000	Mixture	25322-68-3
		10222-01-2
SCALE CLEAR SI 112	107-21-1	
PROBREAK 4	Mixture	57-50-1
		107-21-1
Sulfamic Acid	5329-14-6	
PRO - Flow - 102-N	Mixture	67-63-0
		68439-45-2
		2687-96-9
PROGEL - 4	9000-30-0	

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MND23 N-2H
Marcellus Shale Horizontal
Marshall County, WV

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4705102230

Ground Elevation		1240'		(RKB) 25'		MND23 N-2H SHL				14459372.59N 1706159.49E											
Azm		323.643°		MND23 N-2H LP				14457899.17N 1704439.28E													
WELLBORE DIAGRAM		HOLE		CASING		GEOLOGY		TOP		BASE		MUD		CEMENT		CENTRALIZERS		CONDITIONING		COMMENTS	
	20"	20"	94# J-55	Conductor		0	100	AIR	Drilled in via Dual Rotary (no annular space)		N/A	Once at casing setting depth, ensure hole is clean at TD		Conductor casing = 0.438" wall thickness Burst=2110 psi							
	17.5"	13-3/8" 54.5# J-55 BTC	Fresh Water		538', 801', 898', 947'		AIR	15.6 ppg PNE-1 + 3% bwoc CaCl 40% Excess Yield=1.20 / CTS	Bow Springs (over collars) on first 2 joints then every third joint to 100' from surface	Circulate & condition @ TD w/ Air. RIH w/ casing & fill w/ Fresh Water. Circulate a minimum of 1 hole volume, plus 30 bbls of 8% bentonite Gel/50# of poly flake, then clear casing w/ Fresh Water prior to pumping cement.	Surface casing = 0.380" wall thickness Burst=2730 psi										
			Surface Casing		0	1076															
			Coal(s)		847' - 852'																
	12.25"	9-5/8" 40# J-55 BTC	Big Lime / Big Injun		2154 / 2268	2268 / 2300	AIR	Lead: 15.4 ppg PNE-1 + 2.6% bwoc CaCl 40% Excess / Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl zero% Excess. CTS	Bow Springs (over collars) on first 12 joints, then every third joint to 100' from surface	Circulate & condition @ TD w/ Air. RIH w/ casing & fill w/ Fresh Water. Circulate a minimum of 1 hole volume, plus 30 bbls of 8% bentonite Gel/50# of poly flake, then clear casing w/ Fresh Water prior to pumping cement.	Intermediate casing = 0.395" wall thickness Burst=3650 psi										
			Pocono		2464																
			5th Sand		2824																
			Gordon		3036																
	Intermediate Casing		0	3150																	
	8.5" Vertical	5-1/2" 23# P-110 HC CDC HTQ	Rhinstreet		5946	6238	AIR and/or 9.0ppg SOB	Lead: 14.5 ppg POZ:PNE-1 + 0.3% bwoc R3 + 1% bwoc EC1 + 0.75 gal/sk FP13L + 0.35% bwoc MPA170 Tail: 14.8 ppg PNE-1 + 0.35% bwoc R3 + 0.75 gal/sk FP13L + 50% bwoc ASCA1 + 0.5% bwoc MPA170 20% Excess Lead Yield=1.19 Tail Yield=1.84 CTS	Run 1 spiral centralizer every 5 joints from the top of the curve to surface.	Once on bottom/TD with casing, circulate at max allowable pump rate for at least 2x bottoms up, or until returns and pump pressures indicate the hole is clean. Circulate a minimum of one hole volume prior to pumping cement.	Production casing = 0.415" wall thickness Burst=14520 psi Note: Actual centralizer schedules may be changed due to hole conditions										
	8.5" Curve		Cashaqua		6238	6302	11.5ppg-12.5ppg SOB														
			Middlesax		6302	6325															
			West River		6325	6392															
			Burkett		6392	6410															
			Tully		6410	6439															
Hamilton			6439	6474																	
8.5" Lateral	Marcellus		6474	6640	11.5ppg-12.5ppg SOB																
	LP TMD / TVD		15875	6695																	
Onondaga			6640																		

LP @ 6535' TVD / 7475' MD

8.5" Hole - Cemented Long String
5-1/2" 23# P-110 HC CDC HTQ

+/-8400' R Lateral

TD @ +/-6535' TVD
+/-15875' MD

4/17/19

WW-9
(4/16)

API Number 47 - _____ - _____
Operator's Well No. MND23 N-2H

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name HG Energy II Appalachia, LLC OP Code 494501907

Watershed (HUC 10) Short Creek - Ohio River Quadrangle Powhatan Point 7.5'

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes No

Will a pit be used? Yes No

If so, please describe anticipated pit waste: NA

Will a synthetic liner be used in the pit? Yes No If so, what ml.? _____

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number _____)
- Reuse (at API Number TBD - At next anticipated well)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

Will closed loop system be used? If so, describe: Yes, cuttings and fluids will be collected in a closed loop system, re-used or hauled to an approved disposal site or landfill.

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Vertical - Air, Horizontal - SOB

-If oil based, what type? Synthetic, petroleum, etc. Synthetic

Additives to be used in drilling medium? Water, Soap, KCl, Barite, Base Oil, Wetting Agents

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Approved Landfill

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) NA

-Landfill or offsite name/permit number? See Attached

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Environmental Protection

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature Diane White

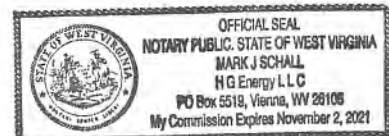
Company Official (Typed Name) Diane White

Company Official Title Agent

Subscribed and sworn before me this 17th day of April, 2019

[Signature] Notary Public

My commission expires 11/2/2021



Form WW-9

Operator's Well No. MND23 N-2H

HG Energy II Appalachia, LLC

Proposed Revegetation Treatment: Acres Disturbed 10.5 Acres Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch Hay 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Tall Fescue	40	Tall Fescue	40
Ladino Clover	5	Ladino Clover	5

Maintain E&S controls through the drilling and completion process

Attach:

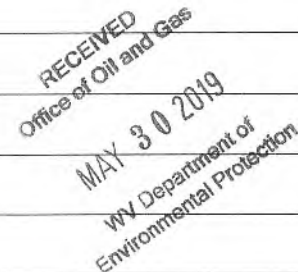
Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Jim Nicholas

Comments: Pre-seed/mulch as soon as reasonably possible per regulation.

Upgrade E&S if needed per WV DEP E&S manual.



Title: Oil & Gas Inspector Date: 4/17/19

Field Reviewed? Yes No

Cuttings Disposal/Site Water**Cuttings -Haul off Company:**

Eap Industries, Inc. DOT # 0876278
 1575 Smith Two State Rd. Atlasburg, PA 15004
 1-888-294-5227

Waste Management
 200 Rangos Lane
 Washington, PA 15301
 724-222-3272

Environmental Coordination Services & Recycling (ECS&R)
 3237 US Highway 19
 Cochran, PA 16314
 814-425-7773

Disposal Locations:

Apex Environmental, LLC Permit # 06-08438
 11 County Road 78
 Amsterdam, OH 43903
 740-543-4389

Westmoreland Waste, LLC Permit # 100277
 111 Conner Lane
 Belle Vernon, PA 15012
 724-929-7694

Sycamore Landfill Inc. Permit #R30-079001 05-2010
 4301 Sycamore Ridge Road
 Hurricane, WV 25526
 304-562-2611

Max Environmental Technologies, Inc. Facility Permit # PAD004835146 / 301071
 233 Max Lane
 Yukon, PA 25968
 724-722-3500

Max Environmental Technologies, Inc. Facility Permit # PAD05087072 / 301359
 200 Max Drive
 Bulger, PA 15019
 724-796-1571

Waste Management Kelly Run Permit # 100663
 1901 Park Side Drive
 Elizabeth, PA 15037
 412-384-7569

Waste Management South Hills (Arnoni) Permit # 100592
 3100 Hill Road
 Library, PA 15129
 724-348-7013
 412-384-7569

Waste Management Arden Permit # 100172
 200 Rangos Lane
 Washington, PA 15301
 724-222-3272

Waste Management Meadowfill Permit # 1032
 1488 Dawson Drive
 Bridgeport, WV 26330

Brooke County Landfill Permit # SWF-103-97 / WV 0109029
 Rd 2 Box 410
 Colliers, WV 26035
 304-748-0014

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Wetzel County Landfill Permit # SWF-1021-97 / WV 0109185
 Rt 1, Box 156A
 New Martinsville, WV 26035
 304-455-3800

Energy Solutions, LLC Permit # UT 2300249
 423 West 300 South
 Suite 200
 Salt Lake City, UT 84101

Energy Solutions Services, Inc. Permit # R-73006-L24
 1560 Bear Creek Road
 Oak Ridge, TN 37830

Northern A-1 Environmental Services Permit ID MID020906814
 3947 US 131 North, PO Box 1030
 Kalkaska, MI 49646
 231-258-9961

Water Haul off Companies:

Dynamic Structures, Clear Creek DOT # 720485
 3790 State Route 7
 New Waterford, OH 44445
 330-892-0164

Nabors Completion & Production Services Co.
 PO Box 975682
 Dallas, TX 75397-5682

Select Energy Services, LLC
 PO Box 203997
 Dallas, TX 75320-3997

Nuverra Environmental Solutions
 11942 Veterans Memorial Highway
 Masontown, WV 26542

Mustang Oilfield Services LLC
 PO Box 739
 St. Clairsville, OH 43950

Wilson's Outdoor Services, LLC
 456 Cracraft Road
 Washington, PA 15301

Disposal Locations:

Solidification
 Waste Management, Arden Landfill Permit # 100172
 200 Rangos Lane
 Washington, PA 15301
 724-225-1589

Solidification/Incineration
 Soil Remediation, Inc. Permit # 02-20753
 6065 Arrel-Smith Road
 Lowellville, OH 44436
 330-536-6825

Adams #1 (Buckeye Brine, LLC)
 Permit # 34-031-2-7177
 23986 Airport Road
 Coshocton, OH 43812
 740-575-4484
 512-478-6545

CMS of Delaware Inc. DBA CMS Oilfield Serv
 301 Commerce Drive
 Moorestown, NJ 08057

Force, Inc.
 1380 Rte. 286 Hwy. E, Suite 303
 Indiana, PA 15701

Solo Construction
 P.O. Box 544
 St. Mary's, WV 26170

Equipment Transport
 1 Tyler Court
 Carlisle, PA 17015

Myers Well Service, -----
 2001 Ballpark Court
 Export, PA 15632

Burns Drilling & Excavating
 618 Crabapple Road P.O. Box
 Wind Ridge, PA 15380

Nichols 1-A (SWIW #13)
 Permit # 3862
 300 Cherrington Pkwy, Suite 200
 Coraopolis, PA 15108
 412-829-7275

Groselle (SWIW #34)
 Permit # 4096
 Rt. 88
 Garrettsville, OH
 713-275-4816

Kemble 1-D Well
 Permit # 8780
 7675 East Pike
 Norwich, Oh 43767
 614-648-8898
 740-796-6495

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Adams #2 (Buckeye Brine, LLC)
2205 Westover Road
Austin TX 78708
Permit # 34-031-2-7178
740-575-4484
512-478-6545

Adams #3 (Buckeye Brine, LLC)
Permit #34-031-2-7241-00-00
2630 Exposition, Suite 117
Austin, TX 78703
512-478-6545

Mozena #1 Well (SWIW # 13)
Permit # 34-157-2-5511-00-00
5367 E. State Street
Newcomerstown, OH 43832
740-763-3966

Goff SWD #1 (SWIW # 27)
Permit # 34-119-2-8776-000
300 Cherrington Pkwy, Suite 200
Coraopolis, PA 15108
412-329-7275

SOS D#1 (SWIW #12)
Permit # 34-059-2-4202-00-00
Silcor Oilfield Services, Inc.
2939 Hubbard Road
Youngstown, OH 44505

Dudley #1 UIC (SWIW #1)
Permit # 34-121-2-2458-00-00
Select Energy Services, LLC
7994 S. Pleasants Hwy
St. Marys, WV 26170
304-665-2652

OH UIC #1 Buckeye UIC Barnesville 1 & 2
CNX Gas Company, LLC
1000 Consol Energy Drive
Permit # 34-013-2-0609-00-00
Permit # 34-013-2-0614-00-00
304-323-6568

US Steele 11385
Permit # 47-001-00561
200 Evergreen Drive
Waynesburg, PA 15730
304-323-6568

Chapin #7 UIC (SWIW #7)
Permit # 34-083-2-4137-00-00
Elkhead Gas & Oil Company
12168 Marne Rd. NE
Newark, OH 43055
740-763-3966

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HG Energy II Appalachia, LLC

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Site Safety Plan

MAY 30 2019
WV Department of
Environmental Protection

MND 23 Well Pad
1931 Nixon Ridge Lane
Moundsville, Marshall County, WV 26041

March 2019: Version 1

ju
4/11/19

For Submission to
West Virginia Department of Environmental Protection,
Office of Oil and Gas

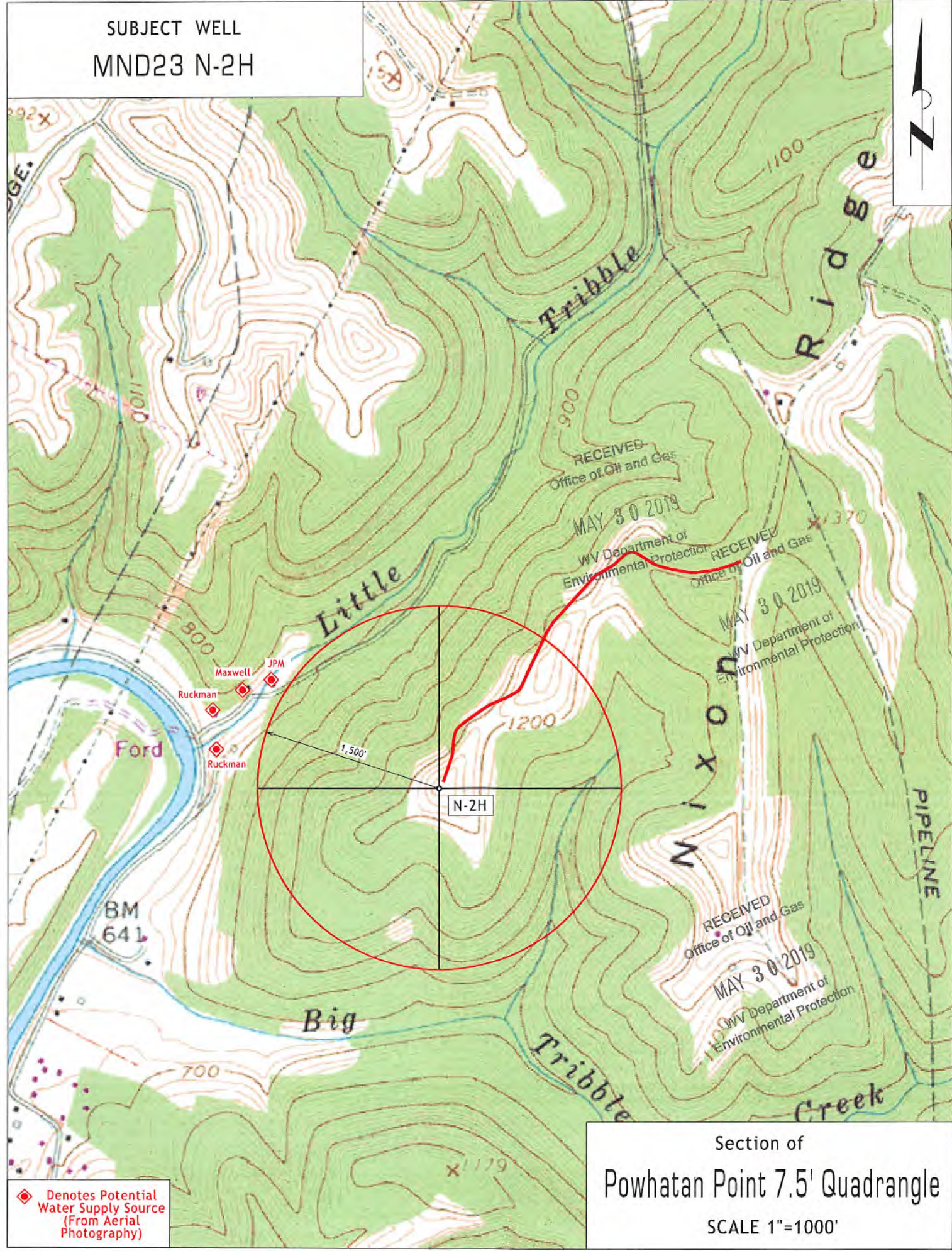
HG Energy II Appalachia, LLC.

5260 Dupont Road
Parkersburg, WV 26101

RECEIVED
Office of Oil and Gas

MAY 30 2019
WV Department of
Environmental Protection

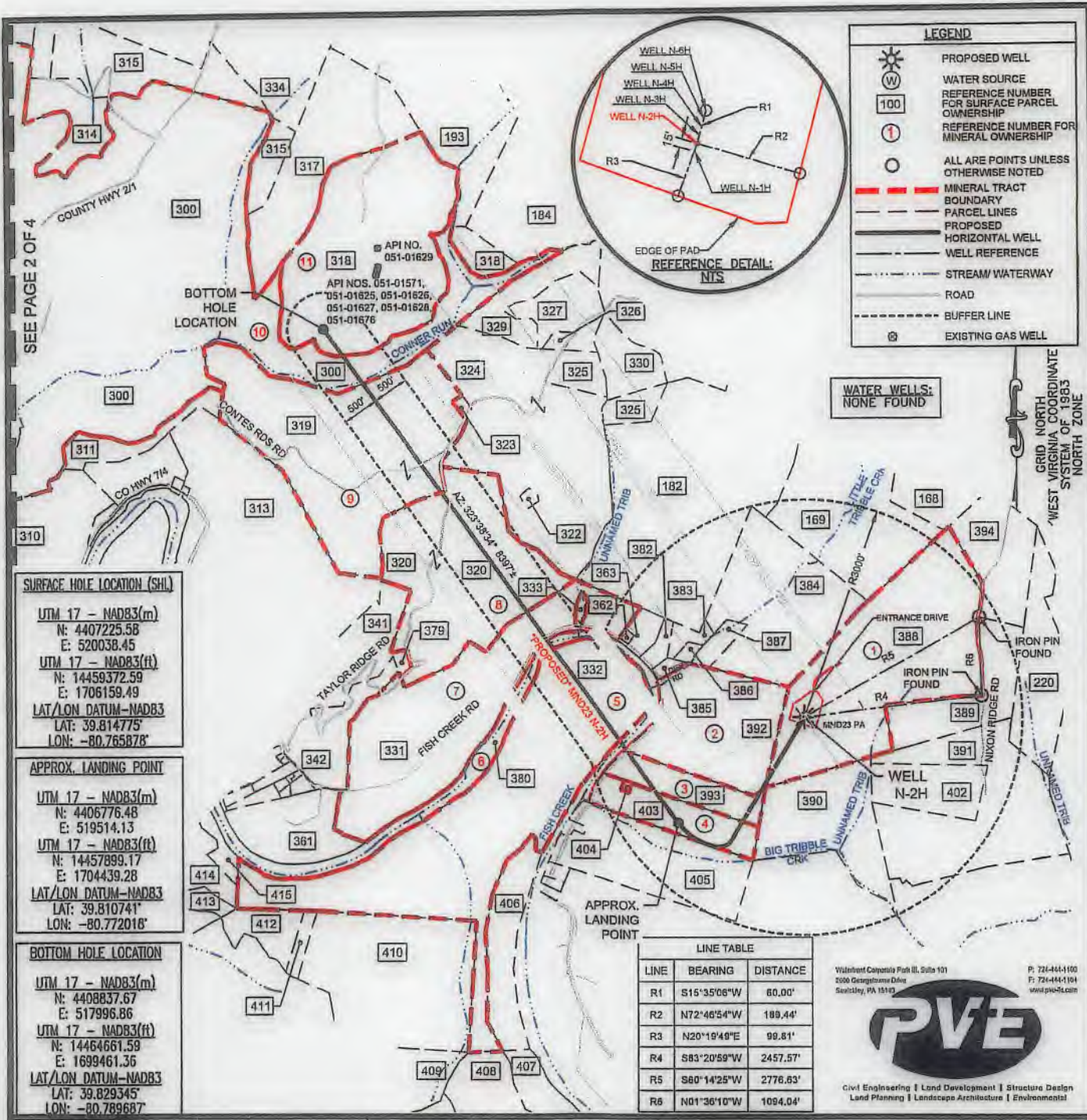
SUBJECT WELL
MND23 N-2H



◆ Denotes Potential Water Supply Source (From Aerial Photography)

Section of
Powhatan Point 7.5' Quadrangle

SCALE 1"=1000'



FILE #: MND23 N-2H

DRAWING #: MND23 N-2H

SCALE: 1"=2000'

MINIMUM DEGREE OF ACCURACY: 1/2500

PROVEN SOURCE U.S.G.S. MONUMENT OF ELEVATION: H 138: 638.58'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

SIGNED:

R.P.E.: _____ L.L.S.: P.S. NO. 2269

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Savitsley, PA 15189

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F: 724-444-1104
www.pve-llc.com

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ADAM J. WESTFALL
LICENSED
No. 2269
STATE OF WEST VIRGINIA
PROFESSIONAL SURVEYOR
PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304

Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED: BIG TRIBBLE CREEK-OHIO RIVER ELEVATION: 1240'

COUNTY/DISTRICT: MARSHALL / FRANKLIN QUADRANGLE: POWHATAN POINT, W. VA./OHIO

SURFACE OWNER: HG ENERGY II, APPALACHIA LLC. ACREAGE: 126.6

OIL & GAS ROYALTY OWNER: CNX GAS COMPANY ACREAGE: 126.6

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON
CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY)

TARGET FORMATION: POINT PLEASANT / MARCELLUS

WELL OPERATOR: HG ENERGY II APPALACHIA, LLC

Address: 5260 DUPONT ROAD

City PARKERSBURG State WV Zip Code 26101

DATE: FEBRUARY 26, 2019

OPERATOR'S WELL #: MND23 N-2H

API WELL # 47 51 0223046A

STATE COUNTY PERMIT

ESTIMATED DEPTH TVD: 6,535' ± TMD: 15,875' ±

DESIGNATED AGENT: DIANE C. WHITE

Address: 5260 DUPONT ROAD


City PARKERSBURG State WV Zip Code 26101

PAGE: 1 OF 4

Bottom Hole is located on topo map 1,453 feet south of Latitude: 39° 50' 00"

Well is located on topo map 6,760 feet south of Latitude: 39° 50' 00"

NOTES:

- There are no water wells or developed springs within 250' of proposed well.
- There are no existing buildings within 625' of proposed well. 
- Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
- There are no native trout streams within 300' of proposed well.
- Proposed well is greater than 1000' from surface/groundwater intake or public water supply.
- It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, and based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

Bottom Hole is located on topo map 11,146 feet west of Longitude: 80° 45' 00"
Well is located on topo map 4,460 feet west of Longitude: 80° 45' 00"

DETAIL (REMAINDER OF AFFECTED PARCEL REFERENCE # 300) SCALE: 1"=2,000'



GRID NORTH COORDINATE SYSTEM OF 1983 NORTH ZONE

SURFACE HOLE LOCATION (SHL)

UTM 17 - NAD83(m)
N: 4407225.58
E: 520038.45
UTM 17 - NAD83(ft)
N: 14459372.59
E: 1706159.49
LAT/LON DATUM-NAD83
LAT: 39.814775°
LON: -80.765878°

APPROX. LANDING POINT

UTM 17 - NAD83(m)
N: 4406776.48
E: 519514.13
UTM 17 - NAD83(ft)
N: 14457899.17
E: 1704439.28
LAT/LON DATUM-NAD83
LAT: 39.810741°
LON: -80.772018°

BOTTOM HOLE LOCATION

UTM 17 - NAD83(m)
N: 4408837.67
E: 517996.86
UTM 17 - NAD83(ft)
N: 14464661.59
E: 1699461.36
LAT/LON DATUM-NAD83
LAT: 39.829345°
LON: -80.789687°



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LEGEND

-  PROPOSED SURFACE HOLE LOCATION ON 7.5' TOPOGRAPHIC MAP
-  PROPOSED BOTTOM HOLE LOCATION ON 7.5' TOPOGRAPHIC MAP

FILE #: MND23 N-2H

DRAWING #: MND23 N-2H

SCALE: 1"=2000'

MINIMUM DEGREE OF ACCURACY: 1/2500

PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT H 138: 638.58'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

SIGNED: 

R.P.E.: _____ L.L.S.: P.S. NO. 2269



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25304



DATE: FEBRUARY 26, 2019

OPERATOR'S WELL #: MND23 N-2H

API WELL # 47 51 0223046A
STATE COUNTY PERMIT

Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow

PAGE: 2 OF 4

WATERSHED: BIG TRIBBLE CREEK-OHIO RIVER ELEVATION: 1240'

COUNTY/DISTRICT: MARSHALL / FRANKLIN QUADRANGLE: POWHATAN POINT, W. VA./OHIO

SURFACE OWNER: HG ENERGY II, APPALACHIA LLC. ACREAGE: 126.6

OIL & GAS ROYALTY OWNER: CNX GAS COMPANY ACREAGE: 126.6

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON
CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY)

TARGET FORMATION: POINT PLEASANT / MARCELLUS ESTIMATED DEPTH: TVD: 6,535' ± TMD: 15,875' ±

WELL OPERATOR: HG ENERGY II APPALACHIA, LLC DESIGNATED AGENT: DIANE C. WHITE

Address: 5260 DUPONT ROAD Address: 5260 DUPONT ROAD

City PARKERSBURG State WV Zip Code 26101 City PARKERSBURG State WV Zip Code 26101

168	MCCLINTOCK DALE ET. UX.	TAX MAP NO. 05-0004-0013-0000-0000
169	FRANKLIN REAL ESTATE CO.	TAX MAP NO. 05-0004-0015-0000-0000
182	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0005-0012-0000-0000
183	FRANKLIN REAL ESTATE CO.	TAX MAP NO. 05-0005-0011-0000-0000
184	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0002-0012-0000-0000
193	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0002-0005-0000-0000
220	MORRIS FRED H ET UX	TAX MAP NO. 05-0004-0009-0000-0000
298	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0005-0011-0000-0000
299	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0007-0005-0000-0000
300	OHIO POWER CO.	TAX MAP NO. 05-0005-0003-0000-0000
301	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0005-0005-0000-0000
302	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0005-0005-0000-0000
303	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0005-0001-0000-0000
304	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0001-0016-0000-0000
305	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0001-0013-0000-0000
306	OHIO POWER CO.	TAX MAP NO. 05-0005-0010-0000-0000
307	CNX GAS COMPANY LLC.	TAX MAP NO. 05-0007-0005-0000-0000
308	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0007-0002-0000-0000
309	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0007-0003-0000-0000
310	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0007-0004-0000-0000
311	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0005-0004-0000-0000
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315	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0002-0002-0000-0000
316	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0002-0001-0000-0000
317	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0005-0001-0000-0000
318	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0005-0002-0000-0000
319	OHIO POWER CO.	TAX MAP NO. 05-0005-0003-0000-0000
320	SANCHEZ GENEVA BASSETT	TAX MAP NO. 05-0005-0004-0000-0000
322	ROBBINS JAMES E & DIANA C	TAX MAP NO. 05-0005-0005-0000-0000
323	MCGINNIS TIMOTHY L SR ET UX.	TAX MAP NO. 05-0003-0003-0001-0000
324	OHIO POWER CO.	TAX MAP NO. 05-0005-0005-0000-0000
325	FRANKLIN REAL ESTATE CO.	TAX MAP NO. 05-0005-0007-0000-0000
326	FRANKLIN REAL ESTATE CO.	TAX MAP NO. 05-0005-0006-0000-0000
327	FRANKLIN REAL ESTATE CO.	TAX MAP NO. 05-0005-0009-0000-0000
329	MCELROY COAL COMPANY	TAX MAP NO. 05-0005-0009-0001-0000
330	HEATHERINGTON ARDEN RAY	TAX MAP NO. 05-0002-0013-0001-0000
331	GATTS RICHARD L. - LIFE	TAX MAP NO. 05-0008-0005-0000-0000
332	MILLER EDWIN C.	TAX MAP NO. 05-0009-0007-0000-0000
333	GATTS RICHARD L.	TAX MAP NO. 05-0009-0005-0000-0000
334	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0002-0003-0000-0000
341	DELBURGE EMERALD H JR.	TAX MAP NO. 05-0008-0003-0000-0000
342	BERISFORD BESSIE M. EST.	TAX MAP NO. 05-0009-0004-0000-0000
361	NIEMAN FRANCES E.	TAX MAP NO. 05-0008-0004-0001-0000
362	CLARK BEVERLY E.	TAX MAP NO. 05-0009-0001-0001-0000
363	RUCKMAN SHELDON R. ET. AL.	TAX MAP NO. 05-0009-0001-0004-0000
368	OHIO POWER COMPANY	TAX MAP NO. 05-0001-0022-0000-0000
379	ARRUDA JOHN F. ET. UX.	TAX MAP NO. 05-0005-0004-0001-0000
380	WV DIVISION OF NATURAL RESOURCES	NO ASSIGNED TRACT #
382	RUCKMAN MARVIN E. ET. UX.	TAX MAP NO. 05-0009-0001-0003-0000
383	MAXWELL WILLIAM L. SR. ET. UX.	TAX MAP NO. 05-0004-0018-0000-0000
384	HOLMAN TERRY L.	TAX MAP NO. 05-0004-0016-0000-0000
385	RUCKMAN MARVIN E.	TAX MAP NO. 05-0009-0001-0002-0000
386	MAXWELL WILLIAM JR.	TAX MAP NO. 05-0004-0019-0000-0000
387	HOLMAN TERRY L.	TAX MAP NO. 05-0004-0017-0000-0000

388	HOLSTINE BERNARD W. & ROXANN L.
389	HOLSTINE BERNARD W. & ROXANN L.
390	LEGG JAMES R. EST.
391	MCCLINTOCK DALE EDWARD
392	RUCKMAN JESSIE GLADYS - LIFE
393	LEGG JEFFERY L.
394	ANDERSON RHONDA MARIE
402	MCCLINTOCK DALE EDWARD
403	LEGG JAMES R EST
404	WHITE KENNETH E ET UX
405	ARNOLD LLOYD C & JUDITH C
406	FRANCIS JAMES EDWARD ET UX
407	DALLISON LUMBER CO
408	ARRICK DAVID H ET UX
409	RINE WALTER C
410	JACKSON JAMES B JR ET UX
411	WHITT PAUL
412	MOORE RANDYLYN ET AL
413	YOHON RONALD G ET AL
414	ROUPE WILLIAM N ET UX
415	CAMPBELL BRUCE S

TAX MAP NO. 05-0004-0014-0000-0000
TAX MAP NO. 05-0004-0014-0002-0000
TAX MAP NO. 05-0005-0003-0000-0000
TAX MAP NO. 05-0009-0005-0000-0000
TAX MAP NO. 05-0009-0001-0000-0000
TAX MAP NO. 05-0009-0002-0001-0000
TAX MAP NO. 05-0004-0014-0001-0000
TAX MAP NO. 05-0009-0005-0000-0000
TAX MAP NO. 05-0009-0002-0002-0000
TAX MAP NO. 05-0009-0002-0002-0000
TAX MAP NO. 05-0009-0035-0000-0000
TAX MAP NO. 05-0009-0008-0000-0000
TAX MAP NO. 05-0009-0031-0000-0000
TAX MAP NO. 05-0011-0004-0000-0000
TAX MAP NO. 05-0011-0002-0000-0000
TAX MAP NO. 05-0008-0009-0000-0000
TAX MAP NO. 05-0011-0001-0005-0000
TAX MAP NO. 05-0011-0001-0000-0000
TAX MAP NO. 05-0007-0032-0000-0000
TAX MAP NO. 05-0007-0031-0000-0000
TAX MAP NO. 05-0007-0031-0001-0000

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LEGEND

100 REFERENCE NUMBER FOR SURFACE PARCEL OWNERSHIP

FILE #: MND23 N-2H

DRAWING #: MND23 N-2H

SCALE: 1"=2000'

MINIMUM DEGREE OF ACCURACY: 1/2500

PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT H 138: 638.58'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

SIGNED:
R.P.E., L.L.S.: P.S. NO. 2269



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304



DATE: FEBRUARY 26, 2019

OPERATOR'S WELL #: MND23 N-2H

API WELL # 47 51 02230 HGA
STATE COUNTY PERMIT

Well Type: Oil Waste Disposal Production Deep

Gas Liquid Injection Storage Shallow

WATERSHED: BIG TRIBBLE CREEK-OHIO RIVER ELEVATION: 1240'

COUNTY/DISTRICT: MARSHALL / FRANKLIN QUADRANGLE: POWHATAN POINT, W. VA./OHIO

SURFACE OWNER: HG ENERGY II, APPALACHIA LLC. ACREAGE: 126.6

OIL & GAS ROYALTY OWNER: CNX GAS COMPANY ACREAGE: 126.6

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON
CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY)

TARGET FORMATION: POINT PLEASANT / MARCELLUS ESTIMATED DEPTH: TVD: 6,535' ± TMD: 15,875' ±

WELL OPERATOR: HG ENERGY II APPALACHIA, LLC DESIGNATED AGENT: DIANE C. WHITE

Address: 5260 DUPONT ROAD Address: 5260 DUPONT ROAD

City PARKERSBURG State WV Zip Code 26101 City PARKERSBURG State WV Zip Code 26101

HG Plot Number	MPIID	Original Lessor	Original Lessee	Surface Parcel Code
1	05-0004-0014-0000-0000	MILLER CHARLES W	CHEVRON USA INC	38B
		PARSONS PAUL ET UX	CHEVRON USA INC	
		RUSSELL SHARON LYN	CHEVRON USA INC	
		HUFF TIMOTHY ET UX	CHEVRON USA INC	
		ARNOLD LLOYD C ET UX	CHEVRON USA INC	
		CRONIN MARY JO	CHEVRON USA INC	
		KURPIL RICHARD ET UX	CHEVRON USA INC	
		CLIFTON CLARA MAE	CHEVRON USA INC	
		EDWARDS GEORGE ET UX	CHEVRON USA INC	
		KYLE DONNA FAE	CHEVRON USA INC	
		CONNER JUDITH MAY	CHEVRON USA INC	
		SCHEIBELHOOD PAUL ET AL	AB RESOURCES LLC	
		AB RESOURCES LLC	NPAR LLC	
		NPAR LLC	Chevron USA INC	
		Chevron USA INC	HG ENERGY II APPALACHIA, LLC	
2	05-0009-0001-0000-0000, 05-0009-0001-0001-0000, 05-0009-0001-0002-0000, 05-0009-0001-0003-0000, 05-0009-0001-0004-0000	Jessi Gladys Ruckman Et Al	Noble Energy, Inc.	392, 362, 385, 382, 368
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	
3	05-0009-0002-0001-0000	Jeffrey L. Legg	Noble Energy, Inc.	393
		Noble Energy, Inc.	CNX Gas Company, LLC	
		CNX Gas Company, LLC	Noble Energy, Inc.	
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	
4	05-0009-0002-0000-0000	James Redman Legg II ET AL	Noble Energy, Inc.	403
		Noble Energy, Inc.	CNX Gas Company, LLC	
		CNX Gas Company, LLC	Noble Energy, Inc.	
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	
5	05-0008-0007-0000-0000	Edwin C. Miller and Klumberly Ann Miller	Noble Energy, Inc.	332
		Noble Energy, Inc.	CNX Gas Company, LLC	
		CNX Gas Company, LLC	Noble Energy, Inc.	
		Noble Energy, Inc.	HG ENERGY II APPALACHIA, LLC	
6	NO ASSIGNED TRACT #	WV Division of Natural Resources	Noble Energy, Inc.	380
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	
7	05-0008-0005-0000-0000	Richard J. Gatts	Chevron USA INC	331
		Chevron USA INC	HG ENERGY II APPALACHIA, LLC	
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	
8	05-0005-0004-0000-0000	Barbara Kay Ewing and Wilber E. Ewing	NOBLE ENERGY INC	320
		Charles Howard Bassett JR and Ruby D. Bassett	NOBLE ENERGY INC	

		Cynthia P. Hopkins, as Trustee of the Cynthia P. Hopkins Revocable Trust	NOBLE ENERGY INC	
		Elizabeth A. Strusbaugh and James R. Strusbaugh	NOBLE ENERGY INC	
		Janet and John Blankenship	NOBLE ENERGY INC	
		Jean C. Thomas	NOBLE ENERGY INC	
		Mary E. Bassett	NOBLE ENERGY INC	
		Robert B. and Violet Thomas	NOBLE ENERGY INC	
		Roger B. and Inken P. Rose	NOBLE ENERGY INC	
		Ruth Ann and Furman F. Wallace	NOBLE ENERGY INC	
		Ruth E. Bassett Meadows and O.W. Meadows Jr	NOBLE ENERGY INC	
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	
		Geneva Bassett Sanchez	Chevron USA INC	
		Chevron USA INC	HG ENERGY II APPALACHIA, LLC	
9	05-0005-0003-0000-0000	AEP Generation Resources Inc. and Kentucky Power Company	Noble Energy, Inc.	319
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	
10	05-0006-0003-0000-0000	Consolidation Coal Company	CNX Gas Company, LLC	300
		CNX Gas Company, LLC	Noble Energy, Inc.	
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	
11	05-0009-0002-0000-0000	James Redman Legg II ET AL	Noble Energy, Inc.	318
		Noble Energy, Inc.	CNX Gas Company, LLC	
		CNX Gas Company, LLC	Noble Energy, Inc.	
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	

Wellston Corporate Park III, Suite 101
2000 Georgetown Drive
Seaside, PA 19154

P: 724-444-1100
F: 724-444-1104
www.pve-dc.com



Civil Engineering | Land Development | Structure Design
Land Planning | Landscape Architecture | Environmental

LEGEND

1 REFERENCE NUMBER FOR MINERAL OWNERSHIP

FILE #: MND23 N-2H


DRAWING #: MND23 N-2H

SCALE: 1"=2000'

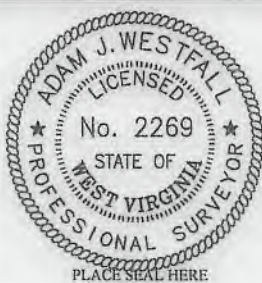
MINIMUM DEGREE OF ACCURACY: 1/2500

PROVEN SOURCE U.S.G.S. MONUMENT OF ELEVATION: H 138: 638.58'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

SIGNED: 

R.P.E.: _____ D.L.S.: P.S. NO. 2269



ADAM J. WESTFALL
LICENSED
No. 2269
STATE OF WEST VIRGINIA
PROFESSIONAL SURVEYOR
PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25304

Well Type: Oil Waste Disposal Production Deep Gas Liquid Injection Storage Shallow

WATERSHED: BIG TRIBBLE CREEK-OHIO RIVER ELEVATION: 1240'

COUNTY/DISTRICT: MARSHALL / FRANKLIN QUADRANGLE: POWHATAN POINT, W. VA./OHIO

SURFACE OWNER: HG ENERGY II, APPALACHIA LLC. ACREAGE: 126.6

OIL & GAS ROYALTY OWNER: CNX GAS COMPANY ACREAGE: 126.6

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY)

TARGET FORMATION: POINT PLEASANT / MARCELLUS

WELL OPERATOR: HG ENERGY II APPALACHIA, LLC

Address: 5260 DUPONT ROAD

City PARKERSBURG State WV Zip Code 26101

DATE: FEBRUARY 26, 2019

OPERATOR'S WELL #: MND23 N-2H

API WELL # 47 51 0223046A

STATE COUNTY PERMIT

PAGE: 4 OF 4

ESTIMATED DEPTH: TVD: 6,535' ± TMD: 15,875' ±

DESIGNATED AGENT: DIANE C. WHITE

Address: 5260 DUPONT ROAD

City PARKERSBURG State WV Zip Code 26101



WW-6A1
(3/13)

Operator's Well No. _____

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
-------------------------	-----------------------	-----------------------	---------	-----------

** See Attached Lease Chain **

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

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Environmental Protection**

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: HG Energy II Appalachia, LLC
 By: Diane White *Diane White*
 Its: Agent

HG Energy II Appalachia, LLC

MND23 N-2H

Lease Chains

HG Plat Number	MPID	Original Lessor	Original Lessee	Royalty	Book	Page
1)	05-0004-0014-0000-0000	MILLER CHARLES W	CHEVRON USA INC	Not less than 1/8	853	59
		PARSONS PAUL ET UX	CHEVRON USA INC	Not less than 1/8	853	430
		RUSSELL SHARON LYN	CHEVRON USA INC	Not less than 1/8	853	422
		HUFF TIMOTHY ET UX	CHEVRON USA INC	Not less than 1/8	846	47
		ARNOLD LLOYD C ET UX	CHEVRON USA INC	Not less than 1/8	846	39
		CRONIN MARY JO	CHEVRON USA INC	Not less than 1/8	846	43
		KURPIL RICHARD ET UX	CHEVRON USA INC	Not less than 1/8	863	594
		CLIFTON CLARA MAE	CHEVRON USA INC	Not less than 1/8	853	426
		EDWARDS GEORGE ET UX	CHEVRON USA INC	Not less than 1/8	853	418
		KYLE DONNA FAE	CHEVRON USA INC	Not less than 1/8	853	449
		CONNER JUDITH MAY	CHEVRON USA INC	Not less than 1/8	853	445
		SCHEIBELHOOD PAUL ET AL	AB RESOURCES LLC	Not less than 1/8	695	629
		AB RESOURCES LLC	NPAR LLC		25	484
		NPAR LLC	Chevron USA INC HG ENERGY II		756	332
Chevron USA INC	APPALACHIA, LLC		41	154		
2)	05-0009-0001-0000-0000, 05-0009-0001-0001-0000, 05-0009-0001-0002-0000, 05-0009-0001-0003-0000, 05-0009-0001-0004-0000	Jessi Gladys Ruckman Et Al	Noble Energy, Inc. HG ENERGY II	Not less than 1/8	730	646
		NOBLE ENERGY INC	APPALACHIA, LLC		39	1
3)	05-0009-0002-0001-0000	Jeffrey L. Legg	HG ENERGY II APPALACHIA, LLC	Not less than 1/8	1041	316
4)	05-0009-0002-0000-0000	James Redman Legg II ET AL	HG ENERGY II APPALACHIA, LLC	Not less than 1/8	1041	313
5)	05-0008-0007-0000-0000	Edwin C. Miller and Kiumberly Ann Miller	TH Exploration, LLC HG ENERGY II	Not less than 1/8	957	257
		TH Exploration, LLC	APPALACHIA, LLC		44	63
6)	No tract # assigned	WV Division of Natural Resources	Noble Energy, Inc. HG ENERGY II	Not less than 1/8	865	558
		NOBLE ENERGY INC	APPALACHIA, LLC		39	1
7)	05-0008-0005-0000-0000	Richard J. Gatts	Chevron USA INC HG ENERGY II	Not less than 1/8	899	479
		Chevron USA INC	APPALACHIA, LLC HG ENERGY II	Not less than 1/8	41	154
		NOBLE ENERGY INC	APPALACHIA, LLC	Fee	39	1

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8)	05-0005-0004-0000-0000	Barbara Kay Ewing and Wilber E. Ewing	NOBLE ENERGY INC	Not less than 1/8	842	34
		Charles Howard Bassett JR and Ruby D. Bassett	NOBLE ENERGY INC	Not less than 1/8	842	1
		Cynthia P. Hopkins, as Trustee of the Cynthia P. Hopkins Revocable Trust	NOBLE ENERGY INC	Not less than 1/8	841	366
		Elizabeth A. Strusbaugh and James R. Strausbaugh	NOBLE ENERGY INC	Not less than 1/8	841	370
		Janet and John Blankenship	NOBLE ENERGY INC	Not less than 1/8	841	368
		Jean C. Thomas	NOBLE ENERGY INC	Not less than 1/8	841	449
		Mary E. Bassett	NOBLE ENERGY INC	Not less than 1/8	841	362
		Robert B. and Violet Thomas	NOBLE ENERGY INC	Not less than 1/8	842	28
		Roger B. and Inken P. Rose	NOBLE ENERGY INC	Not less than 1/8	841	358
		Ruth Ann and Furman F. Wallace Ruth E. Bassett Meadows and O.W. Meadows Jr	NOBLE ENERGY INC	Not less than 1/8	841	364
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	1/8	842	38
		Geneva Bassett Sanchez	Chevron USA INC HG ENERGY II	Not less than 1/8	39	1
		Chevron USA INC	APPALACHIA, LLC	1/8	814	399
		41	154			
9)	05-0005-0003-0000-0000	AEP Generation Resources Inc. and Kentucky Power Company	Noble Energy, Inc. HG ENERGY II	Not less than 1/8	829	157
		NOBLE ENERGY INC	APPALACHIA, LLC		39	1
10)	05-0006-0003-0000-0000	Consolidation Coal Company	CNX Gas Company, LLC	Fee	646	493
		CNX Gas Company, LLC	Noble Energy, Inc. HG ENERGY II	Fee	752	66
		NOBLE ENERGY INC	APPALACHIA, LLC	Fee	39	1
11)	05-0009-0002-0000-0000	James Redman Legg II ET AL	Noble Energy, Inc.	Not less than 1/8	879	580
		Noble Energy, Inc.	CNX Gas Company, LLC		36	395
		CNX Gas Company, LLC	Noble Energy, Inc. HG ENERGY II		37	169
		NOBLE ENERGY INC	APPALACHIA, LLC		39	1

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Environmental Protection



HG Energy, LLC
5260 Dupont Road
Parkersburg, WV 26101
(304) 420-1100 - Office
(304) 863-3172 - Fax

April 9, 2019

Laura Adkins
WV DEP
Division of Oil & Gas
601 57th Street
Charleston, WV 25304

RE: Drilling Under Roads – MND23 N-2H
Franklin District, Marshall County
West Virginia

Dear Ms. Adkins:

HG Energy II Appalachia, LLC, has the right to drill, stimulate and produce wells that are drilled under the County and State Roads as designated on the plats.

Should you have any questions or desire further information, please contact me at dwhite@hgenergyllc.com or 304-420-1119.

Very truly yours,

Diane White

Diane C. White

Enclosures

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WW-6AC
(1/12)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE CERTIFICATION

Date of Notice Certification: 04/09/2019

API No. 47- _____
Operator's Well No. MND23 N2H
Well Pad Name: MND23

Notice has been given:

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State: <u>West Virginia</u>	UTM NAD 83	Easting: <u>520038.5</u>
County: <u>Marshall</u>		Northing: <u>4407225.6</u>
District: <u>Franklin</u>	Public Road Access: <u>Nixon Ridge Road (SLS 21/1)</u>	
Quadrangle: <u>Powhatan Point</u>	Generally used farm name: <u>CONSOL</u>	
Watershed: <u>Little Tribble Creek</u>		

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 100px;"><input checked="" type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
<p>RECEIVED Office of Oil and Gas</p> <p>MAY 30 2019</p> <p>WV Department of Environmental Protection</p>	

Required Attachments:

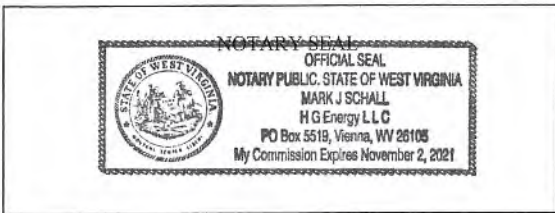
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

Certification of Notice is hereby given:

THEREFORE, I Diane White, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator: HG Energy II Appalachia, LLC
By: Diane White *Diane White*
Its: Agent
Telephone: 304-420-1119

Address: 5260 Dupont Road
Parkersburg, WV 26101
Facsimile: 304-863-3172
Email: dwhite@hgenergyllc.com



Subscribed and sworn before me this 9th day of April, 2019.

Mark J Schall Notary Public

My Commission Expires 11/2/2021

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**

Date of Notice: 04/17/2019 **Date Permit Application Filed:** 04/23/2019

Notice of:

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b), no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner.

Notice is hereby provided to:

SURFACE OWNER(s)
 Name: HG Energy II Appalachia, LLC
 Address: 5260 Dupont Road
Parkersburg, WV 26101
 Name: _____
 Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)
 Name: HG Energy II Appalachia, LLC
 Address: 5260 Dupont Road
Parkersburg, WV 26101
 Name: _____
 Address: _____

SURFACE OWNER(s) (Impoundments/Pits)
 Name: _____
 Address: _____

COAL OWNER OR LESSEE
 Name: Murray Energy Corporation
 Address: 46226 National Road
St Clairsville, OH 43950

COAL OPERATOR
 Name: _____
 Address: _____

WATER PURVEYOR(s)
 Name: _____
 Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
 Name: _____
 Address: _____

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 WV Department of
 Environmental Protection

*Please attach additional forms if necessary

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

This Notice Shall Include:

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall also include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Water Well Testing:

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well.

Water Testing Laboratories:

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments.

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Well Location Restrictions

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No wellpad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such

WV Department of
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factors, if necessary.

Written Comment:

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

Time Limits and Methods for Filing Comments.

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

Comment Requirements

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

Permit Denial or Condition

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access, ~~before~~ to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

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A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

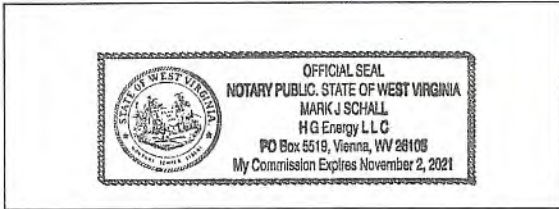
Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Notice is hereby given by:

Well Operator: HG Energy II Appalachia, LLC *Elaine White* Address: 5260 Dupont Road
Telephone: 304-420-1119 Parkersburg, WV 26101
Email: dwhite@hgenergyllc.com Facsimile: 304-863-2172

Oil and Gas Privacy Notice:

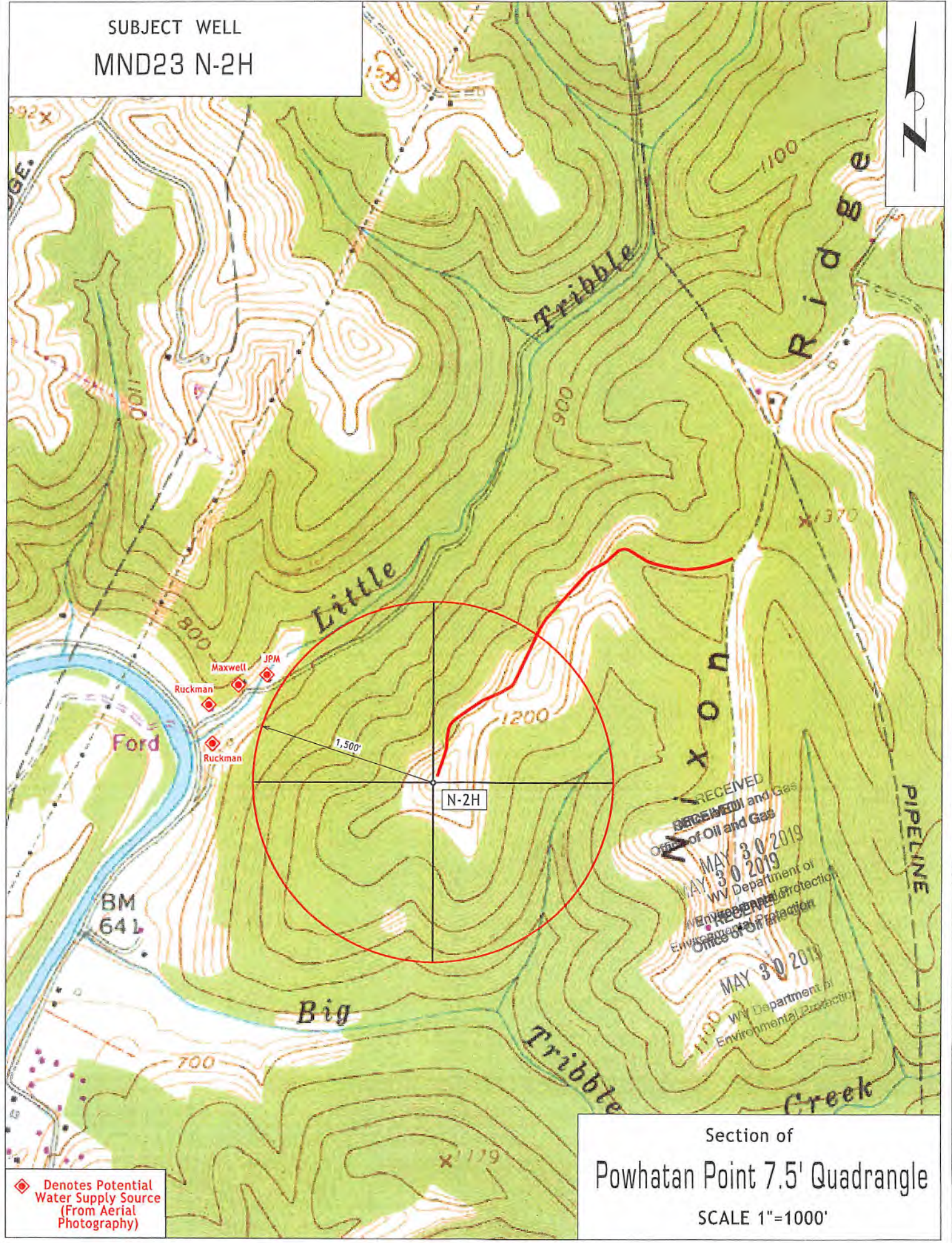
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.



Subscribed and sworn before me this 9 day of APRIL, 2019.
[Signature] Notary Public
My Commission Expires 11/2/2021

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SUBJECT WELL
MND23 N-2H



◆ Denotes Potential Water Supply Source (From Aerial Photography)

Section of
Powhatan Point 7.5' Quadrangle

SCALE 1"=1000'

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WW-6A3
(1/12)

Operator Well No. MND23 N-2H

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF ENTRY FOR PLAT SURVEY

Notice Time Requirement: Notice shall be provided at least **SEVEN (7)** days but no more than **FORTY-FIVE (45)** days prior to entry

Date of Notice: 2/25/19 **Date of Planned Entry:** 3/6/19

Delivery method pursuant to West Virginia Code § 22-6A-10a

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

Notice is hereby provided to:

SURFACE OWNER(s)

Name: HG Energy II Appalachia, LLC
 Address: 5260 Dupont Road
Parkersburg, WV 26101

Name: _____
 Address: _____

Name: _____
 Address: _____

COAL OWNER OR LESSEE

Name: Murray Energy Corporation
 Address: 46226 National Road
St. Clairsville, OH 43950

MINERAL OWNER(s)

Name: - See Attached List -
 Address: _____

*please attach additional forms if necessary

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>39.814775 / 80.765878</u>
County: <u>Marshall</u>	Public Road Access: <u>Nixon Ridge Road - SLS 21/1</u>
District: <u>Franklin</u>	Watershed: <u>Short Creek - Ohio River</u>
Quadrangle: <u>Powhatan Point 7.5'</u>	Generally used farm name: <u>Consol</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: HG Energy II Appalachia, LLC
 Telephone: 304-420-1119
 Email: dwhite@hgenergyllc.com

Address: 5260 Dupont Road
Parkersburg, WV 26101
 Facsimile: 304-863-3172

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Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

Page 1 Continued

Mineral Owners

MILLER, CHARLES W
436 Limerick Drive
Lynchburg, OH 45142

PARSONS, PAUL ET UX
780 Fairmont Pike
Wheeling, WV 26003

RUSSELL, SHARON LYN
100 North Wabash
Wheeling, WV 26003

HUFF, TIMOTHY ET UX
32 Huff Lane
Glendale, WV, 26038

ARNOLD, LLOYD C ET UX
53661 Arman Hill Road
Powhatan Point, OH 43942

CRONIN, MARY JO
67564 North Ray Road
St. Clairsville, OH 43950

KURPIL, RICHARD ET UX
20 Sandy Drive
Benwood, WV 26031

CLIFTON, CLARA MAE
24 Tear Drop Drive
Valley Grove, WV 26060

EDWARDS, GEORGE ET UX
334 North Front Street
Wheeling, WV 26003

KYLE, DONNA FAE
1082 Cherry Hill Road
Wheeling, WV 26003

CONNER, JUDITH MAY
P.O. Box 611
Moon Township, PA 15108

SCHEIBELHOOD, PAUL ET AL
RR 1 Box 216
Proctor, WV 26055

Jessi Gladys Ruckman Et Al
P.O Box 89
Sewickley, PA 15143

Jeffrey L. Legg
3444 Fish Creek Road
Proctor, WV 26055

Edwin C and Kiumberly Ann Miller
185 Kirkman Lane
Proctor, WV 26055

WV Division of Natural Resources
324 Fourth Avenue
South Charleston, WV 25303

Richard J. Gatts
2165 Fish Creek Road
Proctor, WV 26055

Barbara Kay Ewing and Wilber E. Ewing
12782 Eastchester Road
Pickerington, OH 43147

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Mineral Owners

Charles H Bassett Jr & Ruby D. Bassett
16 Pecan Drive
Long Beach, MS 39560

Cynthia P. Hopkins, as Trustee of the
Cynthia P. Hopkins Revocable Trust
7030 Half Moon Circle, Apt 214
Hypoluxo, FL 33462

Elizabeth A. and James R. Strausbaugh
11387 County Road 550
Chillicothe, OH 45601

Janet and John Blankenship
1 Cheves Creek Court
North Augusta, SC 29860

Jean C. Thomas
2573 Starlite Lane
Port Charlotte, FL 33952

Mary E. Bassett
35475 County Road 12
Graysville, OH 45734

Robert B. and Violet Thomas
6 Ford Street
Moundsville, WV 26041

Roger B. and Inken P. Rose
5663 Krystal Court
Cincinnati, OH 45252

Ruth Ann and Furman F. Wallace
904 Colonel Anderson Parkway
Louisville, KY 40222

Ruth E. Bassett Meadows
and O.W. Meadows Jr
8109 Maryland Ave
Marmet, WV 25315

AEP Generation Resources Inc.
and Kentucky Power Company
P.O BOX 16428
Columbus OH 43215

Consolidation Coal Company
1000 Consol Energy Drive
Canonsburg, PA 15317

James Redman Legg II ET AL
James R. Legg
9 Sandy Avenue
Moundsville, WV 26041

James Redman Legg II ET AL
Leslie Suzanne White
90 Leggs Lane
Proctor, WV 26055

James Redman Legg II ET AL
Jeffrey L. Legg
3444 Fish Creek Road
Proctor, WV 26055

HG ENERGY II APPALACHIA, LLC not noticed via certified mail

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STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF INTENT TO DRILL

WAIVER

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Surface Owner Waiver:

I, Eric Grayson, for HG Energy II Appalachia, LLC, hereby state that I have read the notice provisions listed above and hereby waive the notice requirements under West Virginia Code § 22-6A-16(b) for the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>520038.5</u>
County:	<u>Marshall</u>		Northing:	<u>4407225.6</u>
District:	<u>Franklin</u>	Public Road Access:	<u>Nixon Ridge Road (SLS 21/1)</u>	
Quadrangle:	<u>Powhatan Point</u>	Generally used farm name:	<u>CONSOL</u>	
Watershed:	<u>Little Tribble Creek</u>			

Name: Eric Grayson, VP, HG Energy II Appalachia, LLC
Address: 5260 Dupont Road
Parkersburg, WV 26101

Signature: 
Date: 04/03/2019

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at deprivacyofficer@wv.gov.

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WW-6A5
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STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF PLANNED OPERATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**

Date of Notice: 04/11/2019 **Date Permit Application Filed:** 04/11/2019

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

- CERTIFIED MAIL RETURN RECEIPT REQUESTED
- HAND DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s) * Notice Not Sent
(at the address listed in the records of the sheriff at the time of notice):

Name: HG Energy II Appalachia, LLC	Name: _____
Address: 5260 Dupont Road Parkersburg, WV 26101	Address: _____

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: West Virginia	UTM NAD 83 Easting: 520037.3
County: Marshall	Northing: 4407221.2
District: Franklin	Public Road Access: Nixon Ridge Road (SLS 21/1)
Quadrangle: Powhatan Point	Generally used farm name: CONSOL
Watershed: Little Tribble Creek	

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator: HG Energy II Appalachia, LLC	Address: 5260 Dupont Road
Telephone: 304-420-1119	Parkersburg, WV 26101
Email: dwhite@hgenergyllc.com	Facsimile: 304-863-3172

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505

Thomas J. Smith, P. E.
Secretary of Transportation/
Commissioner of Highways

March 18, 2019

Jill M. Newman
Deputy Commissioner

James A. Martin, Chief
Office of Oil and Gas
Department of Environmental Protection
601 57th Street, SE
Charleston, WV 25304

Subject: DOH Permit for the MND-23 Well Pad, Marshall County
MND-23 N-2H Well Site

Dear Mr. Martin,

This well site will be accessed from Permit #06-2019-0284 issued to HG Energy II Appalachia for access to the State Road for a well site located off of Marshall County 21/1 SLS.

The operator has signed a STATEWIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated October 1, 2018.

Very Truly Yours,

Gary K. Clayton, P.E.
Regional Maintenance Engineer
Central Office O&G Coordinator

Cc: Diane White
HG Energy II, LLC
CH, OM, D-6
File

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List of Frac Additives by Chemical Name and CAS #

MND23 Well Pad (N-1H to N-6H)

Chemical Name	CAS #	Multiple CAS #'s
Pro Shale Slik 405	Mixture	68551-12-2 7647-14-5 12125-02-9 64742-47-8
Pro Hib II	Mixture	68412-54-4 68607-28-3 107-21-1 111-76-2 67-56-1 107-19-7
Silica Sand and Ground Sand	Mixture	14808-60-7 1344-28-1 1309-37-1 13463-67-7
Hydrochloric Acid 22 DEG BE	7647-01-0	
PROGEL - 4.5	64742-96-7	
BIO CLEAR 2000	Mixture	25322-68-3 10222-01-2
SCALE CLEAR SI 112	107-21-1	
PROBREAK 4	Mixture	57-50-1 107-21-1
Sulfamic Acid	5329-14-6	
PRO - Flow - 102-N	Mixture	67-63-0 68439-45-2 2687-96-9
PROGEL - 4	9000-30-0	

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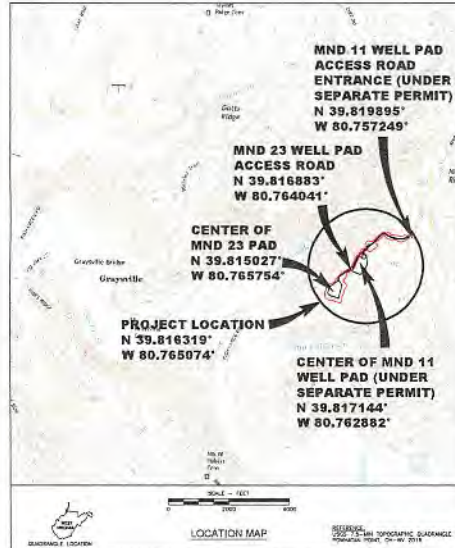
CONSTRUCTION IMPROVEMENT PLANS WITH EROSION AND SEDIMENT CONTROLS HG MND 23 WELL PAD

**APPROVED
WVDEP OOG**
7/22 6/3/2019

MOUNDSVILLE
MARSHALL COUNTY
WEST VIRGINIA

CONSTRUCTION SEQUENCE

1. Prior to commencement of any earth disturbance activity including clearing and grubbing, the registrant shall call West Virginia 811 by dialing 811 or 1-800-245-4848 to identify all utility lines. The registrant also must clearly delineate sensitive areas, riparian forest buffer boundaries, the limits of clearing, and trees that are to be conserved within the project site, and shall install appropriate barriers where equipment may not be parked, staged, operated or located for any purpose.
2. Site access - This is the first land-disturbance activity to take place at the site and should provide BMPs to minimize accelerated erosion and sedimentation from the following areas: entrance to the site, construction routes, and areas designated for equipment or other use at the site including parking, stockpiles.
3. Sediment Barriers - Install perimeter BMPs after the construction site is accessed, keeping associated clearing and grubbing limited to only that amount required for installing perimeter BMPs.
4. Land Clearing and Grading - Implement clearing and grading only after all downslope E&S BMPs have been constructed and stabilized.
5. Surface Stabilization - Apply temporary or permanent stabilization measures immediately to any disturbed areas where work has reached final grade, has been delayed or otherwise temporarily suspended.
6. Construction of Buildings, Utilities and Paving - During construction, install and maintain any additional erosion and sediment control BMPs, and implement any structural post construction stormwater BMPs that may be required.
7. Upon completion of pad grading, compact the pad to grade and begin placement of pad soil cement.
8. Final Stabilization, Topping, Trees and Shrubs - After construction is completed, install stabilization BMPs including: permanent seeding, mulching and riprap, and complete implementation of stormwater BMPs in this last construction phase. Stabilize all open areas, including borrow and spoil areas, and remove all temporary BMPs and stabilize any disturbances associated with the removal of the BMP.



PREPARED FOR
HG ENERGY II APPALACHIA, LLC
5260 DUPONT ROAD
PARKERSBURG, WEST VIRGINIA 26101
(304) 420-1100

PREPARED BY
PENN ENVIRONMENTAL & REMEDIATION, INC.
111 RYAN COURT
PITTSBURGH, PA 15205
(412) 722-1222

Estimated Gross Material Balance (CY)			
Final Development - Gravel Option			
	Out	Fill	Stockpile
MND 23 Pad	68,450	88,470	580
Access Road	100	500	400
Total	68,550	88,970	980
Total Soil Balance:		408 Cut	
Proposed Topsoil (sum of Earthwork)			6,167
Est. Swell Factor (20%)			1,233
Est. Topsoil Stockpile Volume (Loose CY)			7,400
Est. Topsoil To Be Reused on C&F Slopes			1,650
Minimum "Old Stockpile Capacity Required (CY)"			6,042

Notes:
 1. Material balance for cut, gross earthwork quantities only.
 2. Topsoil est. volume based on 6 inches average depth.
 3. Material balance and aggregate quantities based on estimates and may not be representative of actual quantities and may not reflect contractor pay volumes.
 4. Estimates do not reflect contractor pay volumes.

Estimated Gravel Quantities			
	WYOMING	MICHIGAN	111741
4" Base Gravel (Total)	18,033	7,381	25,414
Sub-Grade (Total)	2,136	-	2,136
Total Gravel	20,169	7,381	27,555

Estimated 12" Compact Fill Box Length (LF) (Total)		1,163
Estimated 12" Compact Fill Box Length (LF) (Pad)		1,162
Estimated Total 12" Compact Fill Box Length (LF)		2,325

Estimated Total Limit of Disturbance (Acres)		19,004
Pad Peak Pre-Construction Elevation (F)		1273
Well Pad Sub-Base Elevation (Top of Soil Cement) (F)		1268.83
Well Pad Surface Elevation (F)		1267.85

SHT. NO.	SHEET TITLE
1	TITLE SHEET
2A-2E	SITE DEVELOPMENT PLANS
3	PAD & STOCKPILE SECTIONS
4A-4B	ACCESS ROAD SECTIONS
5A-5F	CONSTRUCTION NOTES & DETAILS
6A-6C	RESTORATION PLAN
7	PROPERTY MAP

WELL #	LAT.	LONG.
1	N 39.814735	W 80.765892
2	N 39.814774	W 80.765978
3	N 39.814814	W 80.765965
4	N 39.814854	W 80.765851
5	N 39.814894	W 80.765938
6	N 39.814934	W 80.765924

WY03-NF WELL COORDINATES
WELL ELEVATIONS = 1237.45

	LATITUDE	LONGITUDE
MND 23 WELL PAD ACCESS ROAD ENTRANCE	N 39.816883	W 80.764041
MND 11 WELL PAD ACCESS ROAD ENTRANCE	N 39.819895	W 80.757249

RECORD OWNER	RECORD LOT #	RECORD AREA OF LOT	AREA WITHIN LOD
HG ENERGY PROPERTY	TM 4 PARCEL 14	121,531 AC.	18,579 AC.
NIXON RIDGE LN ROW	N/A	N/A	0.025 AC.
TOTAL LIMIT OF DISTURBANCE			19,004 AC.

THE DRAWING IS REPRESENTED TO BE CORRECT AND ACCURATE TO THE BEST OF THE ENGINEER'S KNOWLEDGE AND BELIEF. THE ENGINEER DOES NOT WARRANT OR GUARANTEE THE ACCURACY OF THE INFORMATION PROVIDED HEREON. THE ENGINEER'S LIABILITY IS LIMITED TO THE PROFESSIONAL SERVICES PROVIDED AND DOES NOT EXTEND TO THE CONSTRUCTION OF THE PROJECT OR TO THE PERFORMANCE OF THE CONTRACTOR.

REVISION	DATE	DESCRIPTION
1	01/24/2019	REVISED WELL PAD DIMENSIONS
2	02/01/2019	REVISED WELL PAD DIMENSIONS
3	02/06/2019	REVISED CELLAR DETAIL
4	04/29/2019	REVISED TO INCLUDE ACCESS TO PUBLIC ROAD
5	05/17/2019	REVISIONS TO EROSION CONTROL MEASURES
6	05/29/2019	REVISED PER WVDEP COMMENTS



TITLE SHEET
HG MND 23
MARSHALL COUNTY
WEST VIRGINIA

PREPARED FOR
HG ENERGY II APPALACHIA, LLC
PARKERSBURG, WEST VIRGINIA

APPROVED: MEP 07/16/2019
CHECKED: MEP 07/22/2019
DRAWN: MEP 07/22/2019
PROJECT NO.: 4000-PAD07837

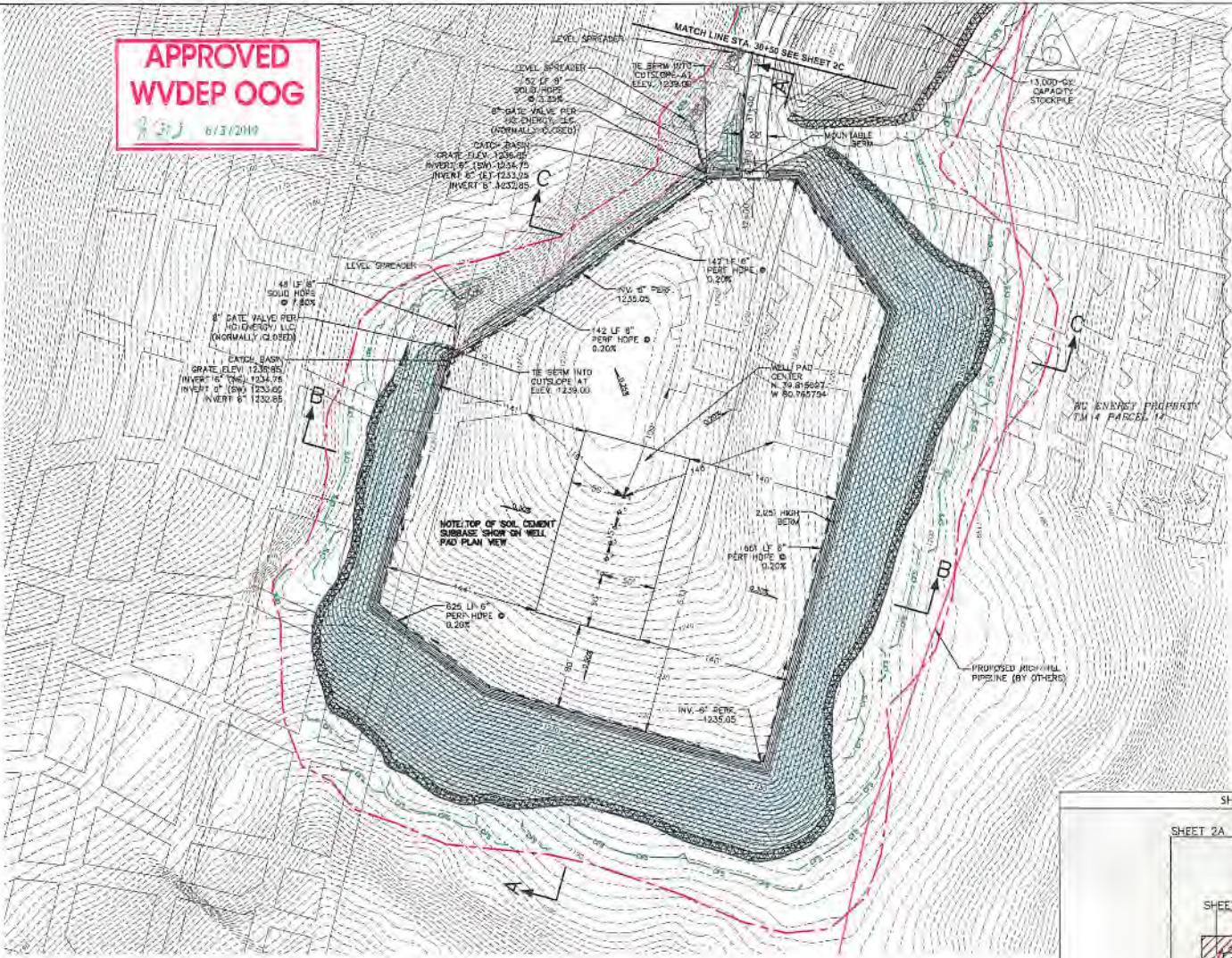
WEST VIRGINIA 811 CALL BEFORE YOU DIG! Dial 811 or 800.245.4848 Max. utility of West Virginia

Penn E&R Environmental & Remediation, Inc.
111 RYAN COURT, PITTSBURGH, PA 15205
412-722-1222

DRAWING NUMBER: PAD07837-D1
SHEET: 1

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APPROVED WVDEP OOG
 6/3/2019



Estimated Gravel Material Balance (CY) (by Development - Riprap Gravel)

Item	Qty	Unit	Stockpile
13,000-CY CAPACITY STOCKPILE	13,000	CY	13,000
Estimated Gravel Material Balance (CY)	13,000	CY	13,000
Material to be Imported	0	CY	0
Material to be Exported	0	CY	0
Material to be Stockpiled	13,000	CY	13,000

Notes:
 1. Material balance for riprap for foundation only.
 2. Riprap will be placed on 4" thick geotextile fabric.
 3. Material balance of aggregate quantity of riprap on site must be verified by independent third party quantity surveyor.
 4. Estimates do not include contractor sub-volume.

Estimated Gravel Quantities

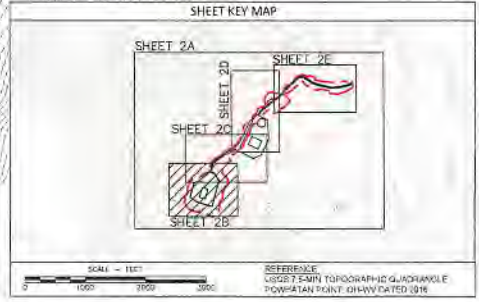
Item	Quantity	Unit
Estimated Gravel Quantities	13,000	CY
Estimated Gravel Quantities	13,000	CY
Estimated Gravel Quantities	13,000	CY

WELL #	LAT.	LONG.
1	N 39.814735	W 80.765892
2	N 39.814774	W 80.765878
3	N 39.814914	W 80.765885
4	N 39.814954	W 80.765851
5	N 39.814994	W 80.765838
6	N 39.814934	W 80.765824

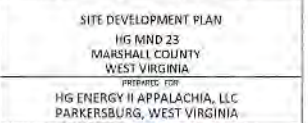
WELL ELEVATIONS = 1237.45



1. ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.
 2. THE GRASS SEED SHALL BE APPLIED TO ALL DISTURBED AREAS.
 3. THE SOIL SHALL BE REFINISHED TO ORIGINAL OR BETTER CONDITION.
 4. THE SOIL SHALL BE REFINISHED TO ORIGINAL OR BETTER CONDITION.
 5. THE SOIL SHALL BE REFINISHED TO ORIGINAL OR BETTER CONDITION.
 6. THE SOIL SHALL BE REFINISHED TO ORIGINAL OR BETTER CONDITION.
 7. THE SOIL SHALL BE REFINISHED TO ORIGINAL OR BETTER CONDITION.
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 11. THE SOIL SHALL BE REFINISHED TO ORIGINAL OR BETTER CONDITION.
 12. THE SOIL SHALL BE REFINISHED TO ORIGINAL OR BETTER CONDITION.
 13. THE SOIL SHALL BE REFINISHED TO ORIGINAL OR BETTER CONDITION.
 14. THE SOIL SHALL BE REFINISHED TO ORIGINAL OR BETTER CONDITION.
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 16. THE SOIL SHALL BE REFINISHED TO ORIGINAL OR BETTER CONDITION.
 17. THE SOIL SHALL BE REFINISHED TO ORIGINAL OR BETTER CONDITION.
 18. THE SOIL SHALL BE REFINISHED TO ORIGINAL OR BETTER CONDITION.
 19. THE SOIL SHALL BE REFINISHED TO ORIGINAL OR BETTER CONDITION.
 20. THE SOIL SHALL BE REFINISHED TO ORIGINAL OR BETTER CONDITION.



REVISION	DATE	DESCRIPTION
1	01/28/2019	REVISED WELL PAD DIMENSIONS
2	02/01/2019	REVISED WELL PAD DIMENSIONS
3	02/08/2019	REVISED CELLAR DETAIL
4	04/29/2019	REVISED TO ALLOW ACCESS TO PUBLIC ROAD
5	05/17/2019	REVISED TO ALLOW ACCESS TO PUBLIC ROAD
6	09/28/2019	REVISED WELL PAD DIMENSIONS



APPROVED: SEP 21/18/2019
 CHECKED: SEP 21/02/2019
 DRAWN: SEP 12/02/2019
 PROJECT NO.: 4000-PAD07837
 DRAWING NUMBER: PAD07837-01
 SHEET: 20

Penn E&R
 Environmental & Restoration, Inc.
 111 RURAL COURT, PITTSBURGH, PA 15205
 412-732-1222

COORDINATES: WEST VIRGINIA STATE PLANES, NAD 83 DATUM, NORTH ZONE

WEST VIRGINIA CALL BEFORE YOU DIG! Dial 811 or 800.245.4848

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